This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented): A polyfunctional sub-assembly ensuring contact, material distribution and heat and/or material exchange of at least one gas phase, and at least one liquid phase, for a vessel containing at least one bed of granular solid, said phases being in overall downflow mode and traversing said bed of granular solid, said sub-assembly comprising at least one distributor tray (P) located above the bed of granular solid, comprising a plurality of downcomers (1) each surmounted by at least one jet disturber device and each having in its upper portion at least one cross section of flow (22) for entry of the major portion of said gas phase into said downcomer and, between said upper portion and the lower portion of said downcomer above tray (P), at least one cross section of flow (2) for entry of the major portion of said liquid phase into said downcomer, and in its lower portion at least one cross section of flow (23) for the two-phase or poly-phase mixture formed in said downcomer for distributing it over the bed of granular solid located below said lower portion, the sub-assembly being characterized in that each downcomer contains at least one packing between its upper portion and its lower portion constituted by at least one element the cross section for flow of which is essentially transverse to the downcomer axis, said element extending across the whole of the transverse cross section of the downcomer in the circulation zone and being constituted by cells through which said liquid and said gas phase pass, said cells orientating the circulation of fluids inside said downcomer in a substantially radial direction.

2. (Original): A sub-assembly according to claim 1, comprising at least one means for dispersing the two-phase or poly-phase mixture formed in said downcomer located close to the cross section of flow (23) of the lower portion of each downcomer.

3. (Original): A sub-assembly according to claim 2, in which each downcomer contains at least two non contiguous packings, the last packing, located close to the cross section

of flow (23) of the lower portion of each downcomer, carrying out said function of dispersing the two-phase or poly-phase mixture formed in said downcomer.

4. (Original): A sub-assembly according to claim 3, in which the last packing, located close to the cross section of flow (23) of the lower portion of each downcomer carrying out said function of dispersing the two-phase or poly-phase mixture formed in said downcomer, comprises a portion that is internal to the downcomer and a portion that is external to said downcomer.

5. (Original): A sub-assembly according to claim 2, in which the means carrying out the dispersion of the two-phase or poly-phase mixture formed in the downcomer is an jet disturber device with a controlled porosity located below and close to the cross section of flow (23) of the lower portion of said downcomer.

Claims 6-13 (Cancelled):

14. (Previously Presented): A sub-assembly according to claim 1, in which the downcomer comprises at least two cross sections of flow (2) of the liquid phase located at different levels above the distributor tray (P) and below the cross section of flow (22) closest to said distributor tray (P).

15. (Previously Presented): A sub-assembly according to claim 1, in which the cross sections of flow of the liquid phase are apertures of any shape and/or slots.

16. (Previously Presented): A sub-assembly according to claim 1, in which the cross section of flow (2) of the liquid phase closest to the distributor tray (P) is located at a sufficient distance from said tray (P) for a level of liquid to be established above said tray (P).

17. (Previously Presented): A sub-assembly according to claim 1, in which the downcomer comprises a portion above the distributor tray (P) and a portion below the distributor tray (P).

18. (Previously Presented): A vessel comprising an upper part and a lower part, an inlet in communication with the upper part for a first liquid fluid and for a second gaseous fluid, at least one bed of granular solids in the interior of said vessel, mounted above said bed a sub-assembly according to claim 1, and above said sub-assembly, said vessel ~~compriseing~~ comprising at least one side inlet for a third fluid, which may be identical to or different from said first or second fluid.

19. (Previously Presented): A vessel according to claim 18, further comprising a heat exchanger and/or material exchanger of said third fluid with at least one of said first or second fluids.

20. (Previously Presented): A vessel according to claim 18, for carrying out a catalytic reaction in which the bed (or beds) of granular solid is a catalyst bed.

21. (Previously Presented): A vessel according to claim 18, comprising means for carrying out a catalytic reaction in which one of the fluids is hydrogen.

22. (Previously Presented): A vessel according to claim 18, comprising a source of gas as said third fluid.

23. (Previously Presented): A polyfunctional sub-assembly ensuring contact, material distribution and heat and/or material exchange of at least one gas phase, and at least one liquid phase, for a vessel containing at least one bed of granular solid, said phases being in overall downflow mode and traversing said bed of granular solid, said sub-assembly comprising at least one distributor tray (P) located above the bed of granular solid, comprising a plurality of downcomers (1) each surmounted by at least one jet disturber device and each having in its upper portion at least one cross section of flow (22) for entry of the major portion of said gas phase into

said downcomer and, between said upper portion and the lower portion of said downcomer above tray (P), at least one cross section of flow (2) for entry of the major portion of said liquid phase into said downcomer, and in its lower portion at least one cross section of flow (23) for the two-phase or poly-phase mixture formed in said downcomer for distributing it over the bed of granular solid located below said lower portion, the sub-assembly being characterized in that each downcomer contains at least one packing between its upper portion and its lower portion constituted by at least one element the cross section for flow of which is essentially transverse to the downcomer axis, said element extending across the whole of the transverse cross section of the downcomer in the circulation zone and being constituted by cells through which said liquid and said gas phase pass, said cells orientating the circulation of fluids inside said downcomer in a substantially radial direction, and wherein each downcomer contains at least 2 non-contiguous packings, the last packing located close to the cross section of flow (23) of the lower portion of each down comer, carrying out said function of dispersing the two-phase or poly-phase mixture formed in said downcomer, and wherein said last packing comprises a portion that is internal to the down comer and a portion that is external to said downcomer.

24. (New): A polyfunctional sub-assembly ensuring contact, material distribution and heat and/or material exchange of at least one gas phase, and at least one liquid phase, for a vessel containing at least one bed of granular solid, said phases being in overall downflow mode and traversing said bed of granular solid, said sub-assembly comprising at least one distributor tray (P) located above the bed of granular solid, comprising a plurality of downcomers (1) each surmounted by at least one jet disturber device and each having in its upper portion at least one cross section of flow (22) for entry of the major portion of said gas phase into said downcomer and, between said upper portion and the lower portion of said downcomer above tray (P), at least one cross section of flow (2) for entry of the major portion of said liquid phase into said downcomer, and in its lower portion at least one cross section of flow (23) for the two-phase or poly-phase mixture formed in said downcomer for distributing it over the bed of granular solid located below said lower portion, the sub-assembly being characterized in that each downcomer \